Top Trends in Artificial Intelligence

Market Forecasting for Innovators and Investors till 2030 and Beyond

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Summary

Artificial intelligence is transforming every aspect of our lives, from personal affairs to professional dealings. Moreover, the pace of change will accelerate rather than slacken going forward. The technology will overturn diverse fields ranging from science, business and medicine to artwork, leisure and governance. Over the medium range, the uprise of productivity should double the global economy by the late 2020s. From a different slant, the global market for smartware is slated to burgeon at an average annual rate of 38.1%: from US$120 billion in 2022 to $1.59 trillion by 2030. Moreover, the lively growth

should prevail until the second half of the 21st century and perhaps much longer.

One outcome will be a groundswell of wealth and income for the mass of humanity. The main beneficiaries include the firebrands at center stage; namely, the youthful ventures and seasoned firms that embrace the technology with gusto. And likewise for the shrewd investors that back the nimble entrepreneurs and agile companies at the leading edge.

On a glum note, an army of hucksters will jump into the fray and hype up the prospects on the horizon, thus coaxing millions of gullible investors into handing over billions of dollars to pump up tinsel ventures. Given the grim record of bubbles and blowouts through the ages, the mass of bilkers and their victims will go bust in droves. On the bright side, though, a cadre of shrewd players who do their homework for real will reap a bonanza despite the turmoil in the marketplace.

In sum, the flowering of artificial intelligence will usher in a renaissance in areas ranging from science and business to healthcare and artwork. Along the way, a core of far-sighted players who join the revolution in earnest will earn the greatest rewards amid the biggest and fastest buildup of wealth the world has ever seen.

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Bloom of Cyber Brains

Artificial Intelligence (AI) is playing an ever-

growing role in far-flung fields ranging from scientific research and medical treatment to business strategy and creative artwork. With rising frequency, digital agents outshine human actors including seasoned experts in their respective domains.

If we look downstream, robots of hardware and software will continue to uplift the productivity of individuals as well as organizations. The applications of AI span the spectrum from routine functions in farming and manufacturing to creative tasks in business and governance.

Rainbow of Human Enterprise

The human experience is entwined with artificial intelligence in the modern era. At a basic level, smart software can assume humdrum tasks and lower the cost of operations. Moreover, deft programs may extract subtle patterns from abstruse data that confound human analysts.

A common example involves a clever bot that provides tailored recommendations in real time based on a user's expressed behavior and subliminal bent. For the discerning consumer, the objects of interest run the gamut from comfy shoes and healthy menus to inspiring books and thrilling movies. By the same token, producers of all breeds – whether they cater to individuals or organizations – may enhance the quality of interaction with their customers while pruning the cost of operations through smart agents.

In the realm of healthcare, virtual medics can better the diagnosis and treatment of complex ailments by taking into account each patient's unique genetic profile. The setup is similar for cyber tutors that adapt the coursework to the skills and foibles of specific students as they evolve over time.

In the financial sector, canny programs have long assessed loan requests from applicants and

spotted bogus transactions by fraudsters even as they make fewer mistakes than human actors in the same roles. In the years to come, smartbots will play a growing role in providing investment advice based on the financial traits of each client by way of income streams and cash reserves, asset diversification and risk tolerance.

In short, AI improves the lives of all humans in their varied roles such as consumers and workers, students and patients. The benefits also apply to organizations of all stripes ranging from startups and conglomerates to nonprofits and governments.

The renaissance has barely begun. If we look to the future, the global economy should blossom faster than ever thanks to the ascent of brainy programs. In the next section, we survey a few milestones in the recent past along with the outlook over multiple timescales for sundry parties such as workers and investors.

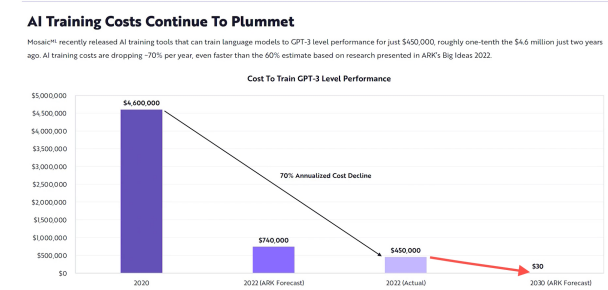
Modern Landmarks in AI

In recent years, a raft of brainwaves has emerged in areas ranging from language comprehension and image analysis to software coding and digital artwork. A notable sample concerns the DALL-E 2 system that can create graphic images based on verbal descriptions of the output desired by a human user.

From a larger stance, a watershed lies in a cyber framework called the Generative Pre-trained Transformer (GPT). This schema is a type of *large language model* (LLM) which employs deep learning techniques for training neural networks. A smartbot based on GPT can generate text that resembles human speech, or devise a computer program using a synthetic language such as Python or JavaScript. By the onset of 2023, transformer models like ChatGPT and GPT-4 could automate roughly half of all coding tasks in

practice, thus doubling the productivity of human programmers.

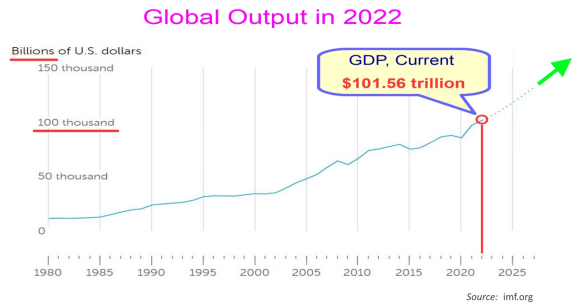
From a different angle, the cost of training AI programs has shriveled by some 70% a year on average. For instance, the tab for crafting a large language model like GPT-3 shrank from $4.6 million in 2020 to $450,000 in 2022. The same type of drill will cost less than $30 by 2030, as shown in the graphic below. Furthermore, the uptrend in efficiency should continue at a similar pace in the decades to come.



These and other advances will doubtless raise the productivity of knowledge workers by more than four-fold by 2030. According to a broad-based assay, the annual output of the global workforce should balloon by some US$200 trillion as a result. The upturn will by itself dwarf the combined payroll of $32 trillion that knowledge workers stand to earn in salaries the same year.

Thanks to the swelling output, the global economy should more than double by the late 2020s, as signposted on the next chart. One outgrowth will be a windfall for the companies that embrace AI in earnest, be they fresh startups or mature concerns. The setup is similar for the

canny investors that back the pioneering firms.



On the glum side, though, legions of slick operators will hype up the gleaming prospects on the horizon to pump up tinsel ventures, thus wheedling billions of dollars from millions of gullible investors. Sadly, the quacks and their marks will go bust en masse. Despite the riot of noise and smog in the field, however, a covey of watchful players who make the right moves will reap a bonanza when the dust at length begins to settle.

To recap, an army of apers will rush into the fray and make waves for a while before they go under. The same fate awaits the throngs of giddy investors who hand over their hard-earned savings to the glib operators. On the other hand, a cadre of tuned-in players who do their homework in depth will earn sumptuous rewards during the greatest creation of wealth the world has ever seen. Along the way, the slow and rash will fall by the wayside in droves while the quick and shrewd race ahead at full blast.

Real and Virtual Domains

Thanks to digital platforms such as neural

networks, smart agents will reshape all manner of jobs to varying degrees. For instance, a watchman may guard a huge compound by directing a squad of mobile robots along with a picket of surveillance cameras overseen by virtual agents. In a similar way, a plantation worker could manage a platoon of autonomous pickers that select the best apples or tomatoes to harvest as they ripen.

With growing frequency, supple agents bolster and even replace low-skilled humans toiling in jobs that are dull, dirty and unsafe. The story is similar for high-end professionals engaged in creative functions. But for now, we will focus mostly on the impact on knowledge-based workers.

Classes of AI Products

The market for artificial intelligence may be split into three broad groups: hardware, software, and services. The *hardware* segment deals with physical goods designed to speed up computation and pare down costs. One such example is an electronic chip that streamlines the training process for neural networks. Another is a photonic device that employs laser beams to boost the speed while slashing the cost of computing.

Meanwhile, the *software* portion of the AI market will continue to claim the biggest share of revenues till at least the 2030s. This category bears on cyber products such as adept bots that can digest complex data, detect obscure signals, and offer fresh insights to human principals.

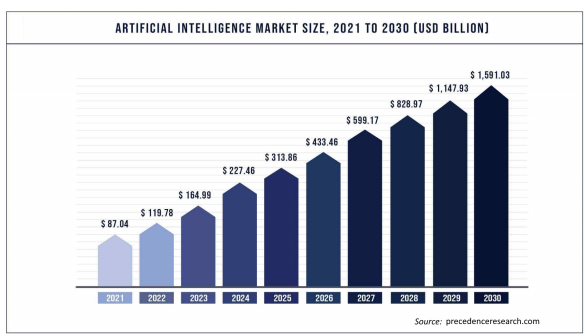
Lastly, the *service* branch of the AI market applies to supplemental functions such as consulting, implementation, and maintenance. An example concerns a review of the competitive threats faced by a given company, along with the fix-up of a strategic plan for deploying AI platforms to meet

the challenges. Another sample involves the buildup of a turnkey system for a chatbot designed to handle routine queries from customers regarding a client firm's product line.

In short, the uprise of artificial intelligence will upend the entire economy, with far-reaching consequences for workers of all skill levels. As always, radical change comes with huge opportunity – and those who act with foresight and gumption are bound to earn fabulous rewards.

Market Forecasts

The worldwide market for artificial intelligence was valued at US$119.78 billion in 2022. Looking downrange, the turnover is slated to reach $1.591 trillion by 2030 as shown on the next chart. Based on these values, the *compound annual growth rate* (CAGR) should amount to 38.1% over the span of eight years ending in 2030.



If we delve more deeply, North America made up 43% of the global market for AI in 2022. As a result, the dynamic region claimed the biggest share of revenues that year.

On the other hand, the Asia-Pacific zone is poised to grow at the fastest rate going forward. More precisely, the uptrend should display a CAGR of 42% between 2022 and 2030.

In terms of product types, the software segment

made up 41% of the AI market in 2022. Most notably, neural networks based on deep learning techniques accounted for 39% of the market that year.

With regard to practical applications, the duo of advertising and media jointly comprised 22% of the market in 2022. In this category, an example concerned the generation of sales copy meant to present a mundane product in a glowing light. Another sample involved the automated issue of a stock market report at the end of the trading day, based on an online feed of raw data obtained from a third party.

If we look downrange, however, the healthcare segment is poised to overtake the ad and media group by the second half of the 2020s. The roles of AI in this context run the gamut from medical diagnosis, genomic profiling, and robotic surgery to remote monitoring, document handling, and knowledge discovery.

To round up, the world market for AI is tracking a growth rate of 38.1% a year on average, thus leading to $1.59 trillion by 2030. Furthermore, the uptrend will likely prevail at a similar rate until the second half of the 21st century and perhaps much longer still.

Conclusion

The flowering of artificial intelligence is transforming every aspect of our lives, from personal affairs to professional dealings. Moreover, the pace of change will speed up rather than slow down as time goes by. The technology will overturn far-flung fields ranging from business and healthcare to leisure and artwork. Over the medium range, the upsurge of productivity should double the global economy by the late 2020s.

The global market for AI products is slated to burgeon at an annual rate of 38.1% on average,

thus yielding a turnover of $1.59 trillion by 2030. What's more, the uptrend will likely prevail long into the 21st century and even afterward.

One outgrowth will be a bonanza for the mass of humanity. To this end, the main drivers consist in youthful ventures and seasoned firms that embrace the technology with gusto. The story is similar for savvy investors that back the firebrands in the form of daring entrepreneurs and plucky companies at the leading edge.

As with any upheaval in the world at large, myriads of shamsters will take up devious schemes to take advantage of the turmoil. Legions of slick operators will jump into the fray and hype up the prospects on the horizon, thus coaxing millions of gullible investors into handing over billions of dollars to pump up shoddy ventures. Given the grim record of bubbles and blowouts through the ages, the whopping bust that follows the thumping boom at each stage of evolution and extinction will squelch the grifters and their victims. On the upside, though, a covey of shrewd players who do their homework for real will earn plush sums despite the rage of noise and smog in the field.

To wrap up, we stand on the cusp of a renaissance thanks to the ascent of artificial intelligence in areas ranging from science, business and medicine to artwork, leisure and governance. In the brave new world, a core of far-sighted actors who join the revolution in earnest will reap the greatest rewards amid the biggest and fastest buildup of wealth the world has ever seen.

Sources

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Keywords

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